S/125/62/000/001/011/011
D036/D113

AUTHOR: Medovar, B.I., Doctor of Technical Sciences

TITLE: The International Symposium on Stainless Steels and Alloys

PERIODICAL: Avtomaticheskaya svarka, 15 no. 1, 1962, 91-95

TEXT: The Mezhdunarodnyy simpozium po nerzhaveyushchim stalyam i splavam (International Symposium on Stainless Steels and Alloys), organized by the Czechoslovakian Scientific and Technical Society, was held in Prague from September 11-19, 1961. Over 25 reports were heard by representatives from the CSSR, USSR, GDR, Hungary, Poland, Rumania, China, France, England, Austria and Finland. The author, who is attached to the Institut electrosvarki im. Ye.O.Patona (Electric Welding Institute im. Ye.O.Paton), reported on "Electroslag Remelting - A New Method of Raising the Quality of Stainless and Refractory Steels and Alloys"; this report was based on published data supplied by the Electric Welding Institute, the "Elektrostal'", "Dneprospetsstal'" and other plants; M.V.Pridantsev, Doctor of Technical Sciences and A.A.Babakov (TsNIIchermet), Candidate of Technical Sciences and

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The International Symposium ... S/125/62/000/001/011/011
D036/D113

head of the Soviet delegation, discussed, amongst other things. the properties of Х 21 Н 5Т (Kh21N5T), 0 Х 21 Н 5Т (0Kh21N5T) and Х 21 Н 6 М 2Т (Kh21N6M2T) steels, economically alloyed with nickel; Szombatfalvi (Hungary) reported on a magnetic method of determining ferrite and martensite content in austenitic steels and welds; V.N.Dyatlova, Candidate of Technical Sciences (NIIkhimmash) discussed methods of combatting corrosion in titanium and in steels intended to replace 1 Х 18 Н 9Т (1Kh18N9T) steel in the chemical industry; Jar. Pluhař, Corresponding Member of the AS CSSR reviewed the development and future prospects of stainless steels and alloys in the CSSR; F. Pobořil. Doctor, and M.Zezulová, Engineer, of the Prague Institute of Ferrous Metallurgy reported on the Х 18 Н 5 Г 8 (Kh18N5G8) and Х 18Г 1[illegible] (Kh18G15) rolled stainless steels; Hsieh-Hsi-Sang and J Čadek, Candidates of Technical Sciences, of the last-named institute, reported on structural changes in the δ-ferrite of 12% chrome refractory steels; K.Leb[illegible] and B.Potůček of the Prague Institute of Materials and Technology, reported [illegible] economical nitrogen-alloyed, chrome-manganese, austenitic stainless steel of types Kh18N5G8 and Kh18G15 for castings, the last named institute [illegible]-

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The International Symposium ...

gether with the Institute for the Protection of Materials im. G V.Akimov presented a report by M.Vyklický, M.Pražák, and V.Číhal on the effect of alloying elements on the corrosion-resistance of high-nickel, acid-resistant austenitic steels containing 18-22% Cr and 21-30% Ni and alloyed with molybdenum, silicon, copper and tungsten; S.Drápal (CSSR), Candidate of Technical Sciences, spoke on structural transformations occurring while heat-treating 13% chrome steels; K.Skuin from the East German Steel Research Institute in Henningsdorf, reported on the causes of brittle failure at about 700°C of austenitic steels stabilized by niobium and tantalum and subjected to cold deformation. J.Szǔts (Hungary) spoke on saving nickel in industry and using stainless and acid-proof steels, J.Ježek, V.Číhal, and R.Pospíšil (CSSR) spoke on phase-transformations in austenitic stainless steels stabilized by niobium and titanium, I.A. Lubenets, N.V. Keys, and D.G. Zhukov of the Chelyabinskiy metallurgicheskiy zavod (Chelyabinsk Metallurgical Plant) described how the productivity of smelting units could be increased by producing stainless steels using oxygen; V. Hašek, Candidate of Technical Sciences, of the Prague School of Higher Technical Education reported on hot-pressure working of austenitic stainless steels; V.V. Topilin, Engineer, of the zavod "Elektrostal'" ("Elektrostal'" Plant) and G.A. Vachugov, Engineer,

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The International Symposium ...

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D036/D113

of the Zlatoustskiy metallurgicheskiy zavod (Zlatoust Metallurgical Plant) were members of the Soviet delegation. The participants visited the International Fair in Brno, the Královo Pole Chemical Machinery Plant, a metallurgical plant in Ostrava, the Prague Institute of Ferrous Metallurgy, the Institute for the Protection of Materials im. G.V.Akimov, and the Prague School of Higher Technical Education, and were given the opportunity of visiting the Welding Institute in Bratislava. Brabec, Doctor, Rector of the Prague School of Higher Technical Education, is mentioned.

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36687
S/125/62/000/005/003/010
D040/D113

1.2300

AUTHORS: Medovar, ~~B.I.~~, Chekotilo, L.V., Lutsyuk-Khudin, V.A., Pinchuk, N.I., and Puzrin, L.G.

TITLE: Alloying heat-resistant austenitic steels, alloys and welds with 0.3 - 1.5% boron

PERIODICAL: Avtomaticheskaya svarka, 15 no. 5, 1962, 9-17

TEXT: The authors review data from their own experiments and from 22 Soviet and non-Soviet publications, and show that heat-resistant austenitic metal, alloyed with 0.3 - 1.5% boron, features increased long-term strength and crack-resistance. It is proved that metal containing boron as an alloying element has a two-phase (austenitic and eutectic boride) structure, which improves the properties of the metal. As revealed by Medovar and Lutsyuk-Khudin, ("Avtomaticheskaya svarka", no. 12, 1961), 0.015 - 0.020% B in steel leads to local fusion of the grain boundaries and to the growth of hot cracks which

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S/125/62/000/005/003/010
D040/D113

Alloying heat-resistant austenitic steels....

can subsequently cause local failure of welds; however, no austenitic steel samples with more than 0.35% B were prone to local failure in the weakness zone. According to data presented by Professor G.V. Estulin and Engineer L.Ye. Ivanova, boron greatly increases the heat-resistance of welds, e.g. addition of 0.41% B to Х18Н11Б (Kh18N11B) type welds almost doubled the strength of welds in 100-hour tests at 650°C under a load of 20-36 kgf, or raised the pre-failure test time ten times. Similar results were obtained with Х15Н35 (Kh15N35) welds. Welding of steel with not more than 0.8 - 1.0% B caused no difficulties, but higher B content increased the cold cracking danger because of lowered plasticity and a large eutectic phase. It is advised to use pre-heating and moderated cooling in welding such steel. Electroslag remelting is suggested for improving the plasticity of boron-alloyed steel destined for fabrication with deformation, i.e. rolling. Conclusions: Alloying heat-resistant austenitic steels and welds with over 0.3 - 0.4% boron greatly increases the resistance to crystallization cracks, practically eliminates the danger of hot cracks appearing at the welds, produces very good welded joints in service at high temperature and loads, and considerably improves the heat

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Alloying heat-resistant austenitic steels....

S/125/62/000/005/003/010
D040/D113

resistance of the metal. There are 7 figures and 3 tables.

ASSOCIATION: Ordena Trudovogo Krasnogo Znameni Institut elektrosvarki im. Ye.O. Patona AN USSR (Electric Welding Institute "Order of the Red Banner of Labor" im. Ye.O. Paton, AS UkrSSR)

SUBMITTED: January 14, 1962

✓

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MEDOVAR, B.I.; KSENDZYK, G.V.

Electric slag remelting of austenitic G13 steel. Avtom. svar.
15 no.9:18-21 S '62. (MIRA 15:9)

1. Ordena Trudovogo Krasnogo Znameni Institut elektrosvarki im.
Ye.O.Patona AN UkrSSR.
(Steel ingots) (Zone melting)

MEDOVAR, B.I.; PINCHUK, N.I.

Preventing the embrittlement of 25-20 type austenitic welded joints. Avtom.svar. 15 no.10:46-49 0 '62.
(MIRA 15:11)

1. Ordena Trudovogo Krasnogo Znameni Institut elektrosvarki im. Ye.O. Patona AN UkrSSR.
(Steel, Heat-resistant--Welding)
(Phase rule and equil[illegible])

PATON, B. Ye.; MEDOVAR, B. I.

Improving the quality of steels and alloys for important welded structures. Avtom. svar. 15 no.11:1-7 N '62. (MIRA 15:10)

1. Ordena Trudovogo Krasnogo Znameni Institut elektrosvarki imeni Ye. O. Patona AN UkrSSR.

PATON, B.Ye., akademik; MEDOVAR, B.I., doktor tekhn.nauk; LATASH, Yu.V.,
kand.tekhn.nauk; MAKSIMOVICH, B.I., inzh.; STUPAK, L.M., inzh.

Achievements and further prospects for electric slag refining.
Stal' 22 no.11:1001-1005 N '62. (MIRA 15:11)

1. Institut elektrosvarki im. Ye.O.Patona AN UkrSSR.
(Zone melting) (Electrometallurgy)

ACCESSION NR: AT4016062 S/2698/63/000/000/0141/0146

AUTHOR: Paton, B. Ye.; Medovar, B. I.; Latash, Yu. V.

TITLE: Electroslag casting and its future use in the foundry industry

SOURCE: Soveshchaniye po teorii liteyny*kh protsessov. 8th, 1962. Mekhanicheskiye svoystva litogo metalla (Mechanical properties of cast metal). Trudy* soveshchaniya. Moscow, Izd-vo AN SSSR, 1963, beginning with "Protsess EShP..." on page 145 through page 146

TOPIC TAGS: casting, foundry technology, electroslag casting, electrode, electrode melting, aluminum, aluminum alloy

ABSTRACT: Following an extensive study of the techniques and uses of electroslag remelting (the remelting of used electrodes in cooled crystallizers), a process which may be used for the manufacture of high-quality, alloy steel castings of simple shape, the authors point out that electroslag casting can be used to produce sleeves, journals, liners and other parts characterized by high density, homogeneity of the macro- and microstructure, high purity, and stable mechanical properties. By employing used electrodes of varying length or by varying the number of electrodes melted, castings may be made of varying height or

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ACCESSION NR: AT4016062

shape. The electroslag castings have about the same properties as well stressed common metal. By melting electrodes made of different metals in one bunch, it is possible to obtain alloy castings of the required composition. For example, by melting an electrode consisting of iron and aluminum bars, the Institut electrosvarki (Institute of Electric Welding) obtained castings of Yu12 and Yu16 alloys. The aluminum in these castings was distributed moreevenly than in the usual ones. Orig. art. has: 6 figures and 5 tables.

ASSOCIATION: none

SUBMITTED: 00 DATE ACQ: 27Dec63 ENCL: 00

SUB CODE: MM NO REF SOV: 000 OTHER: 000

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MEDOVAR, B.I.

First International Conference on Chemical Engineering Techniques, Chemical Machine Manufacture, and Automatic Control. Avtom. svar. 16 no.2:91-94 F '63. (MIRA 16:4)
(Chemical engineering—Congresses)

MEDOVAR, B.I.; PINCHUK, N.I.; CHEKOTILO, L.V.
[redacted]

Increasing the maximum permissible concentrations of phosphorus and silicon in stable austenitic welds. Dokl. AN SSSR 150 no.3:541-543 My '63. (MIRA 16:6)

1. Institut elektrosvarki im. Ye.O. Patona AN UkrSSR. Predstavleno akademikom B.Ye. Patonom.
(Welding)

S/125/63/000/002/010/010
A006/A101

AUTHOR: Medovar, B. I.

TITLE: The First International Congress on Chemical Engineering, Chemical Machinebuilding, and Automation

PERIODICAL: Avtomaticheskaya svarka, no. 2, 1963, 91 - 94

TEXT: The Congress took place in September 1962 in Brno, Czechoslovakia, and was attended by about 500 Czech specialists and over 350 delegates from 20 countries. The following reports were delivered by the Soviet block representatives: Academician, N. M. Zhavoronkov, delivered an introductory report on research conducted in the USSR in the field of chemical engineering; M. Vyklitskiy, Candidate of Technical Sciences, Institute of Materials and Technology, Praha, on type Х21Н5Т (Kh21N5T) bi-phase steels; F. Poborzhil and M. Zezulova, Institute of Ferrous Metallurgy, Praha, on the properties of type Х16Г15АМ (Kh16G15AM) no. 7470, and Х16Г15АН2 (Kh16G15AN2), no. 7471, steels having up to 40 $kG/mm^2$ yield limits; F. Mayer, Institute of Ferrous Metallurgy, Praha, on type Х19Г9АН5 (Kh19G9AN5) austenitic steel; Engineer Sh. Gorvat,

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Bratislava Welding Institute, on peculiarities in welding heat-resistant, manganese-chromium, nickel-free austenitic steels; V. Bizek and K. Lebl, Candidate of Technical Sciences, Praha Institute of Materials and Technology, on some problems of welding austenitic nitrogen-containing, type Х18Г8Н5 (Kh18G8N5) and Х18Г15 (Kh18G15) austenitic steels; A. Shustek, and K. Lebl., Candidate of Technical Sciences (Institute of Materials and Technology) on welding Kh18GN5 and Kh18G15 steel castings; S. Pivovar, Candidate of Technical Sciences, Warsaw Polytechnic Institute, on welding stainless type Х17 (Kh17) and Х17Т (Kh17T) chrome steels; Engineer Z. Bayer on welding stainless steels, including generalized literature data and experiments of the Pl'zen Plants imeni Lenin (former Škoda); A. Zapletalek, Bratislava Welding Institute, on weldability of materials for the chemical industry; I. Rayman and M. Kashpar, Gradets-Karlov Plant, ČSSR, on toughness of stainless steels (3 $kG/cm^2$) permissible for operation at temperatures down to -200°C; Doctor R. Pospishil and M. Zezulova, Kladno United Metallurgical Plants and the Institute of Ferrous Metallurgy, on dispersion-hardening stainless steels grade 10Х17Н7ФТ (10Kh17N7FT), 08Х16Н7Ф (08Kh16N7F) and 10Х16Н5М (10Kh16N5M); Engineer Ya. Khvoyka, Vitkovitse Metallurgical Plant, VŽKG, ČSSR, on stainless steel production techniques;

S/125/63/000/002/010/010
A006/A101

The First International Congress on...

I. Elfmark, Candidate of Technical Sciences, Ostrava VŽKG plant, on the manufacture of large-size high-alloy 12- and 14% chrome steel forgings and type Х16Н13 (Kh16N13) and Х14Н19 (Kh14N19) chrome-nickel austenitic steels; Engineer K. Protiva on technological problems in the manufacture of nickel alloys at the Kladno United Steelmelting Plants; B. I. Medovar, Doctor of Technical Sciences, Institute of Electric Welding imeni Ye. O. Paton, AS UkrSSR, on "New techniques of producing thick-walled welded containers for the chemical industry from bi-layer steel with corrosion-resistant austenitic coating"; Engineer M. Zhidek, Vitkovitse Metallurgical Plant in Ostrava, on the production of steel plates, clad with stainless steel; V. G. D'yakov, Candidate of Technical Sciences, and co-authors I. A. Levich, and A. V. Shreyder, Candidate of Technical Sciences, Giproneftemash, Moscow, on investigating mechanical and corrosion properties, and the weldability of bi-phase steel substitutes, titanium and substitute-base alloys, aluminum and aluminum alloys; V. Shidlo and others, Praha Chemico-Technological Institute, on corrosion resistance of nitrided titanium; V. Sedlachek, Panenskie Biezhny Research Institute of Metals, on the effect of small platinum and palladium amounts on the corrosion resistance of titanium alloys; F. Benesh and D. Tlust, Institute of Ferrous Metallurgy, on high-strength

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weldable structural steels; V. Pilous, Candidate of Technical Sciences, Pl'zen Plant imeni Lenin, on manual arc welding chrome-molybdenum-vanadium and chrome-molybdenum-tungsten-vanadium steels, 120 mm thick; Engineer V. Kvizda, Kralovopol'sk Plant, on electric-slag welding longitudinal seams on thick-walled containers and on automatic submerged-arc welding of spherical bottoms; Engineer I. Bechka, imeni Lenin Plants, on electric-slag welding of containers from carbon boiler steel type 22K $\delta = 170$ mm.

L 10763-63 EWP(k)/EWP(q)/EWT(m)/BDS--AFFTC/ASD--Pf-4--JD/HM
ACCESSION NR: AP3002322 S/0125/63/000/006/0091/0093

60

AUTHOR: Medovar, B. I.; Pinchuk, N. I.

TITLE: Effect of boron on austenitic weld structure

SOURCE: Avtomaticheskaya svarka, no. 6, 1963, 91-93

TOPIC TAGS: fully austenitic welds, hot cracking, boron effect, silicon, phosphorus

ABSTRACT: A recent study has shown that the upper limits of the Si and P contents (0.25% Si and 0.020% P) in fully austenitic welds can be considerably increased by the addition of 0.3—0.6% boron to the weld metal. The experiments were conducted with two 18—8-type steel weld metals: 05Kh19N9FBS (0.06—0.07% C, 19.33—21.16% Cr, 9.18—9.61% Ni, 1.51—1.60% V, 1.13—1.26% Nb, 0.0—1.06% B) and 05Kh19N9T (0.4—0.06% C, 17.75—18.91% Cr, 9.36—9.95% Ni, 0.21—0.31% Ti, 0.0—0.50% B). Boron was introduced as an Fe-B master alloy (20.2% B, 1.98% Al, 1.70% Si). Metallographic examination and phase analysis indicate that B acts as a strong austenitizer; it reduces the amount of primary $\delta$-ferrite in the metal and is 10 times as effective as Ni in this respect. Thus, the addition of 0.3—0.5% B to the weld is equivalent to increasing the Ni content by 3—5%. The boride eutectic

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L 10763-63
ACCESSION NR: AP3002322

formed in boron-bearing austenitic welds dissolves active ferritizers, such as V, Nb, Si, Ti, and apparently, also P. Such welds, have satisfactory ductility and improved resistance to hot cracking at respective Si and P contents as high as 0.7 and 0.08%. Orig. art. has: 3 figures and 1 table.

ASSOCIATION: none

SUBMITTED: 00 DATE ACQ: 12Jul63 ENCL: 00

SUB CODE: 00 NO REF SOV: 004 OTHER: 002

Card 2/2

MEDOVAR, B.I.; LYUTSUN-KHUDIN, V.A.

Rapid method of estimating the tendency of austenite steels and alloys to local failure. Zav.lab. 29 no.1:81-86 '63. (MIRA 16:2)

1. Institut elektrosvarki imeni Ye.O.Patona AN UkrSSR.
(Austenite--Testing)

MEDOVAR, B.I.; PUZRIN, L.G.; LUTSYUK-KHUDIN, V.A.; PAVLIYCHUK, G.A.; VOLOSHKEVICH, G.Z.

New phenomenon of plastic welding in the weld zone. Dokl. AN SSSR 148 no.5:1064 F '63. (MIRA 16:3)

1. Institut elektrosvarki im. Ye.O.Patona AN UkrSSR. Predstavleno akademikom B.Ye.Patonom.

(Welding)

L 11088-63 EWP(k)/EWP(q)/EWT(m)/BDS--AFFTC/ASD--Pf-4--JD 62
ACCESSION NR: AP3000749 S/0020/63/150/003/0541/0543 61

AUTHOR: Medovar, B. I.; Pinchuk, N. I.; Chetotilo, L. V.

TITLE: Increasing the upper limits of phosphorous and silicon in fully austenitic welds

27 27

SOURCE: AN SSSR. Doklady, v. 150, no. 3, 1963, 541-543

TOPIC TAGS: welding, fully austenitic steel, hot cracks, boron effect, silicon effect, phosphorous effect

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ABSTRACT: The effect of boron on susceptibility to hot cracking of fully austenitic Cr-Ni steel welds has been studied. Currently the Si content must be kept below 0.25% and the P content below 0.020% to reduce hot cracking. This, however presents serious difficulties in melting these steels. Adding 0.3—0.6% boron to 25—20 and 15—35 type austenitic steels solved the problem and made it possible to weld steels containing 0.53—0.63% Si and 0.020—0.94% P. The addition of boron results in the formation of a complex Fe-Ni-Cr-B eutectic, capable of dissolving Si, P, and other liquating elements. Mechanical tests made on 25—20 and 15—35 austenitic welds (see Table 1 of Enclosure) showed that boron-bearing welds annealed at 1100C have satisfactory mechanical properties, though somewhat

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L 11088-63
ACCESSION NR: AP3000749

inferior to those of boron-free welds. At high temperatures, however, the difference becomes negligible (see Table 2 of Enclosure). The rupture life of welds C, D, and E, at 800C under a stress of 10 kg/mm$^2$ (after 10-hr stabilization at 800C) was 78, 192, and 215 hr.

ASSOCIATION: Institut elektrosvarki im. Ye. O. Patona Akademii nauk SSSR (Electric Welding Institute, Academy of Sciences, USSR)

SUBMITTED: 05Nov62 DATE ACQ: 21Jun63 ENCL: 01

SUB CODE: ML,MA NO REF SOV: 004 OTHER: 000

Card 2/3

MEDOVAR, Boris Izrailevich, doktor tekhn.nauk; LATASH, Yuriy Vladimovich. kand. tekhn. nauk; IVANOV, S.M., red.; RAKITIN, I.T., tekhn. red.

[The rebirth of steel] Stal' rozhdaetsia vnov'. Moskva, Izd-vo "Znanie," 1963. 39 p. (Novoe v zhizni, nauke, tekhnike. IV Seriia: Tekhnika, no.16) (MIRA 16:9)
(Steel—Electrometallurgy) (Zone melting)

PHASE I BOOK EXPLOITATION SOV/6431

Medovar, Boris Izrailevich, Yuriy Vadimovich Latash, Boleslav Ivanovich Maksimovich, and Leonid Mikhaylovich Stupak

Elektroshlakovyy pereplav (Electroslag Melting) Moscow, Metallurgizdat, 1963. 169 p. Errata slip inserted. 2250 copies printed.

Ed. (Title page): B.Ye. Paton, Academician, Academy of Sciences USSR, Lenin Prize Winner; Ed. of Publishing House: G.L. Pozdnyakova; Tech. Ed.: V.V.Mikhaylova.

PURPOSE: This book is intended for metallurgists working in the production of high-quality steels and alloys. It may also be useful to students at metallurgical schools of higher education, consumers of high-quality metal, and workers in various branches of metallurgy, machine building, shipbuilding, boiler making, and instrument making.

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COVERAGE: The book describes the electroslag melting of steel and alloys, a new method of producing high-quality metals. Results of scientific research work related to the electroslag melting method are summarized. Numerous data on the quality of metal produced by this method are presented, and prospects for the further development of electroslag melting are discussed. The authors thank S.A.Leybenzon, A.F.Tregubenko, M.M.Klyuyev, V.V. Topilin, V.S.Kultygin, Yu.A.Shulte, Professor and Doctor of Technical Sciences, G.A.Koval', and others for their assistance. They particularly thank B.Ye.Paton, Member of Academy of Sciences, Ukrainian SSR. There are 92 references, primarily Soviet.

TABLE OF CONTENTS:

From the Publisher 5

Foreword 7

MEDOVAR, B.I.; CHEKOTILO, L.V.; LUTSYUK-KHUDIN, V.A.; PINCHUK, N.I.; PUZRIN, L.G.

Addition alloys of boron (more than 0.3 - 0.4%) in austenitic heat-resistant steels and weldments. Issl. po zharoproch. splav. 10:178-185 '63. (MIRA 17:2)

MEDOVICH, R.M., inzh.

First suspension bridges in Russia. Trans. stroi. 13 no.8:
75-76 Ag '63. (MIRA 17:2)

ARISTARKHOV, V.V., inzh.; MEDOVIKOV, I.I., inzh.

Manufacture and assembly of the precast reinforced concrete upper structure of a quay. Transp. stroi. 12 no.1:24-26 Ja '62. (MIRA 17:2)

MEDOVAR, B.I., doktor tekhn. nauk

Use of electric slag welding in the machinery industry.
Mashinostroenie no.5:78-81 S-O '63. (MIRA 16:12)

1. Institut elektrosvarki imeni Ye.O. Patona AN UkrSSR.

ACCESSION NR: AT4013946 S/2659/63/010/000/0178/0185

AUTHOR: Medovar, B. I.; Chekotilo, L. V.; Lutsyuk-Khudin, V. A.; Pinchuk, N. I.; Puzrin, L. G.

TITLE: Boron alloys (over 0.3-0.4%) for high temperature austenite steel and weld seams

SOURCE: AN SSSR. Institut metallurgii. Issledovaniya po zharoprochny*m splavam, v. 10, 1963, 178-185

TOPIC TAGS: boron, boron containing alloy, austenite steel, high temperature steel, weld seam, weld metal

ABSTRACT: Austenite high-temperature steels alloyed with boron consist of two phases (austenite + boron component of eutectic origin) and are characterized by high tensile strength and elasticity. The use of boron alloys (over 0.3-0.4%) for high temperature austenite steel allows one to solve several important problems. The weld metal sharply increases stability against the formation of hot (crystalline) cracks. Hot cracks adjacent to the weld seams are completely eliminated during welding. The reliability of weld seams working under high temperature and loads is increased significantly by the exclusion of the causes of local brittle failure in the seam zone. The heat resistance of austenite steel and

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ACCESSION NR: AT4013946

weld seams is increased to a great extent. Investigations and experimental work at plants should be expanded so as to develop both new high-temperature austenite steel, as well as flow processes for the use of these steels for welding. Orig. art. has: 3 tables and 3 microphotographs.

ASSOCIATION: Institut metallurgii AN SSSR (Metallurgical Institute AN SSSR)

| | | |
|---|---|---|
| SUBMITTED: 00 | DATE ACQ: 27Feb64 | ENCL: 00 |
| SUB CODE: ML | NO REF SOV: 015 | OTHER: 007 |

Card 2/2

KHASIN, G.A.; VACHUGOV, G.A.; MENUSHENKOV, P.P.; POSYSAYEVA, L.I.; MEDOVAR, B.I.; MAKSIMOVICH, B.I.

Production of EI736 and EI961 steel by the electric slag remelting method. Avtom. svar. 16 no.9:78-81 S '63. (MIRA 16:10)

1. Zlatoustovskiy metallurgicheskiy zavod (for Khasin, Vachugov, Menushenkov, Posysayeva). 2. Institut elektrosvarki im. Ye.O. Patona AN UkrSSR (for Medovar, Maksimovich).

MEDOVAR, Boris Izrailevich, doktor tekhn. nauk; TIMOFEYEV, M.M., kand. tekhn. nauk, retsenzent; CHEKUNINA, M.G., inzh., red.

[Welding of austonite steels and alloys] Svarka austenitnykh stalei i splavov. Kiev, Tekhnika, 1964. 183 p. (MIRA 17:8)

L 43617-65 EPA(s)-2/EWP(k)/EWP(z)/EWA(c)/EWT(m)/EWP(b)/T/EWA(d)/EWP(w)/EWP(v)/EWP(t)
Pf-4 IJP(c) MJW/JD/HM/GS
S/0000/64/000/000/0275/0287 29

ACCESSION NR: AT5008308

AUTHOR: Medovar, B.I. (Doctor of technical sciences) B+1

TITLE: Electroslag melting and weldability of austenitic steels

SOURCE: AN UkrSSR. Institut elektrosvarki. Novyye problemy svarochnoy tekhniki (New problems in welding technology). Kiev, Izd-vo Tekhnika, 1964, 275-287

TOPIC TAGS: electroslag welding, electric welding, electroslag melting, austenitic steel welding, fusion welding, crack formation, TOPIC TAGS: electroslag welding, electric welding, electroslag melting, steel, austenitic steel weldability, steel welding, fusion welding, crack formation, steel embrittlement

ABSTRACT: Cracks appear in austenitic chromium-nickel steel during fusion welding, both in the joint and in the joint zone. Problems connected with crystalline crack formation have been studied in the austenitic joint based on primary crystallization in the welding bath. However, the formation of cracks in the base metal is more involved. The cracks appear between the grains in the overheated zone close to the joint, and consist of both crystalline cracks and intergranular cracks. The conditions of formation of intergranular cracks have been investigated insufficiently. The main cause of their appearance is not only embrittlement by precipitation of the δ phase, but also by contamination of the boundary of austenitic grains with fusible elements such as phosphorus, sulfur, lead, tin,

volumes of austenitic grains with fusible

Card 1/3

L 43617-65

ACCESSION NR: AT5008308

antimony, arsenic, non-metallic inclusions and gases. Cracking of austenitic steel is thus

Previously, it was considered that any type of metal may be

A new metallurgical process

Card 2/3

L 43617-65

ACCESSION NR: AT5008308

No matter what causes the cracks to appear, an increase in metal purity improves its plasticity and lowers its tendency to fail. Tests were performed under factory conditions with steam piping (217 x 27 mm) with 1Kh18N12T electroslag austenitic steel. It was seen plasticity and lowers its tendency to with steam piping (217 x 27 mm) with 1Kh18N12T electroslag austenitic steel. It was seen that larger grains increased the possibility of cracking. When the steel consists of grains of different sizes the cracks appear through the coarse grains. It may be assumed that overheating during welding may lead to different results depending on the purity of the metal. Tests were also made by the author together with V. I. Rabinovich on the effect of electroslag welding on the sensitivity of 22K, 09G2S and 16GNM steel to the thermal cycle. These tests are of primary importance not only because they simplify the technological process, but also because they create possibilities of reducing the negative effect of irreversible processes. The application of pure metals will lead to homogenizing of weld joints for atomic power enterprises, but the technology and methods of automatic welding must also be improved. Orig. art. has: 7 figures and 5 tables.

ASSOCIATION: Institut elektrosvarki im. Ye. O. Patona AN UkrSSR (Electric Welding Institute, AN Ukr SSR)

SUBMITTED: 05Nov64 ENCL: 00 SUB CODE: IE, MM

NO REF SOV: 015 OTHER: 001

Card 3/3 CC

ACCESSION NR: AP4023734 S/0114/64/000/003/0025/0030

AUTHOR: Medovar, B. I. (Doctor of technical sciences, Professor)

TITLE: Welding of austenitic heat-resistant steels and alloys used in gas turbines

SOURCE: Energomashinostroyeniye, no. 3, 1964, 25-30

TOPIC TAGS: welding, heat resistant steel welding, austenitic steel welding, gas turbine, gas turbine welding, electroslag welding, submerged arc welding, vacuum welding

ABSTRACT: Experimental work performed by the Institute of Electric Welding along the following three lines is reported: (1) Improving the weldability of austenitic steels and alloys by electroslag remelting; (2) Developing methods of submerged-arc welding and electroslag welding of high-nickel heat-resistant steels and alloys; (3) Electron-beam and diffusion welding of heat-resistant steels and alloys. These beneficial effects of electroslag remelting in EI696, EI725, EP380, EP202, EP381, and 1Kh18N12T steels are reported: no segregation

Card 1/2

ACCESSION NR: AP4023734

of inclusions, higher plasticity, fewer cracks in the weld-affected zone. Ingots of up to 13 tons of electroslag-remelted steel have been produced. New manganese-containing fluxes ANF-15 and ANF-17 oxidize silicon, thereby preventing the formation of hot cracks. ANF-17 was successfully used in welding the body of a GTU-50-800 turbine made from KhN35VT heat-resistant alloy. Boron-alloyed welds (ANF-22 flux) have a reduced sensitivity to Si and P. This flux was tested in welding EI725 steel. A number of welding wires recommended for use in conjunction with the above fluxes are indicated. The prospects of electron-beam and diffusion vacuum welding are briefly discussed. Orig. art. has: 8 figures and 3 tables.

ASSOCIATION: Institut elektrosvarki im. Ye. O. Patona AN UkrSSR (Institute of Electric Welding, AN UkrSSR)

| | | |
|---|---|---|
| SUBMITTED: 00 | DATE ACQ: 15Apr64 | ENCL: 00 |
| SUB CODE: PR, AP | NO REF SOV: 000 | OTHER: 000 |

Card 2/2

SMOLYAKOV, V.F.; SHUL'TE, Yu.A.; MEDOVAR, B.I.; GAREVSKIKH, I.A.;
LATASH, Yu.V.; TSIVIRKO, E.I.; ZABALUYEV, Yu.I.; TOPCHIY, S.F.

Nonmetallic inclusions in electric slag refined 12Kh2N4A structural steel. Met. i gornorud. prom. no.4:35-37 Jl-Ag '64.
(MIRA 18:7)

FAYBISOVICH, L.I.; VARAKIN, P.I.; LARICHKIN, M.S.; MEDOVAR, B.I.; LATASH, Yu.V.; MAKSIMOV, I.P.; TYURIN, V.I.; BUSHMELEV, V.M.

Effect of electric slag remelting on the quality of rotor open-hearth steel. Met. i gornorud. prom. no.5:18-21 S-O '64. (MIRA 18:7)

MEDOVAR, B.I.

ACCESSION NR: AP4041869 S/0133/64/000/007/0640/0642

AUTHOR: Gabuyev, G. Kh.; Yel'tsov, K. S.; Shul'te, Yu. A.; Mikhaylov, P. A.; Garevskikh, I. A.; Leybenzon, S. A.; Tsivirko, E. I.; Medovar, B. I.; Latash, Yu. V.; Frantsov, V. P.; Pakhomov, A. I.; Kaganovskiy, G. P.; Voinov, S. G.; Shalimov, A. G.; Kalinnikov, Ye. S.; Smolyakov, V. P.; Kosoy, L. F.

TITLE: Improvement of the quality of electroslag-melted ball-bearing steel

SOURCE: Stal', no. 7, 1964, 640-642

TOPIC TAGS: ball bearing steel, electroslag melted steel, high purity steel, steel electroslag melting

ABSTRACT: Several variants of electroslag melting have been tested in an attempt to improve the quality of ball-bearing steel. The analysis of electroslag-melted steel showed that nitrides and carbonitrides constitute the greatest part (up to 75%) of the nonmetallic inclusions present in the steel. These nitrides derive from the initial material. The electroslag process eliminates large nitrides over 20μ in diameter, but does not eliminate the smaller ones.

Card 1/3

ACCESSION NR: AP4041869

Therefore, the nitrogen and titanium contents of the initial metal must be reduced to a minimum. This can be done, for example, by refining the metal in the ladle with synthetic slag. Electroslag melting of open-hearth steel refined with synthetic slag eliminated all the inclusions larger than 10μ and reduced the number of smaller inclusions by more than 50% and the nitrogen and oxygen contents to 0.0053 and 0.0020%, respectively. To produce ultra-high purity ball-bearing steel, the double electroslag melting was applied with a combination of various fluxes. The use of ANF-6-ANF-6 fluxes in double electroslag melting or of AN-29-ANF-6 fluxes produced best results. Ultra-high purity steel, fully satisfying requirements for critical ball bearings, was obtained. Orig. art. has: 2 figures.

ASSOCIATION: Dneprospetsstal' (Dneprospetsstal' plant); Zaporozhskiy mashinostroitel'ny*y institut (Zaporozh Machine-Building Institute); Institut elektrosvarki im Ye. O. Patona (Electric Welding Institute); TsNIIChM

MEDOVAR, B.I.

Welding austenite steel and alloys. Avtom. svar. 17 no.6:1-13 Je '64 (MIRA 18:1)

1. Institut elektrosvarki imeni Ye.O. Patona AN UkrSSR.

ACCESSION NR: AP4043205 S/0125/64/000/008/0050/0053

AUTHORS: Medovar, B. I.; Rabinovich, V. I.

TITLE: Electro-slag remelting of boiler manganese steel 09G2S

/7-

SOURCE: Avtomaticheskaya svarka, no. 8, 1964, 50-53

TOPIC TAGS: boiler steel deficiency, steel friability, sulfur, oxygen, nitrogen, steel heat resistance, impact strength, welding, steel aging, steel tempering, normalizing, electro slag remelting, manganese steel, boiler steel, instrument steel, steel

ABSTRACT: While steel 09G2S has desirable properties for use in boilers and instruments, insufficiencies (pores, accumulation of non-metallic enclosures) appeared in the thick-rolled form, lowering the quality of welded units and boilers. Tests for the electroslag treatment were conducted with 100 mm thick steel sheets used for electrodes; these were remelted into ingots with flux, then forged to a slab on which tests for its chemical composition and mechanical strength were conducted. The results are tabulated. Electroslag remelting decreased the contents of sulfur, oxygen, nitrogen and non-metallic enclosures by about ½; the steel becomes

ACCESSION NR: AP4043205

less sensitive to overheating (tests at 350C). Impact strength remained practically the same, in the sheet and in welded seams, even after aging. The required mechanical properties of assemblies executed with electroslag weld could frequently be obtained without normalizing. The only requirement was high temperature tempering to releave strains. The first pilot plant product confirms the laboratory experience. Orig. art. has: 6 tables

ASSOCIATION: Institut elektrosvarki im. E. O. Patona AN UkrSSR (Institute of Electrowelding, AN UkrSSR)

SUBMITTED: 26Oct63

ENCL: 00

SUB CODE: MM

NR REF SOV: 005

OTHER: 000

Card 2/2

MEDOVAR, B.I.

The XVII Congress of the International Welding Institute. Avtom. svar. 17 no.10:90-95 O '64 (MIRA 18:1)

L 33544-65 EWT(m)/EWA(d)/EWP(t)/EWP(b) MJW/JD/HB
ACCESSION NR: AP5009176 S/0125/64/000/011/0093/0094

AUTHOR: Medovar, B. I.; Langer, N. A.; Yushkevich, Z. V.; Lutsyuk-Khudin, V. A.; Gasik, M. I. 32 27 B

TITLE: Corrosion resistance of weld joints of low-carbon steel type 00Kh25N20

SOURCE: Avtomaticheskaya svarka, 17 no. 11, 1964, 93-94 16 18

TOPIC TAGS: corrosion resistance, metal welding, nitric acid, 17 steel, weld heat treatment, corrosion resistant, austenitic steel

ABSTRACT: Chromium-nickel austenitic steel type 1Kh18N9T and aluminum type A00 are used in equipment designed for the manufacture of concentrated nitric acid 16 16 27 type A00 are used in equipment designed for the manufacture of concentrated nitric acid.

By following the optimum welding technology and techniques for joining type 1Kh18N9T steel the welds are stable to nitric acid at concentrations of up to 80% and temperatures of 70°C. At higher acid concentrations or higher temperatures the steel loses its corrosion resistance and weld joints frequently undergo extensive crack-type corrosion.

Attempts were made to use type EI654 steel for work under the indicated

Card 1/6

4

conditions. However, weld joints of the steel tend to pitting, which reaches a depth of 3 mm/year.

Low-carbon austenitic steels type 00Kh25N20 can be used for work with oxidising media. The maximum decrease in the carbon of the steel must provide the necessary corrosion resistance for the steel and its weld joints under the

L 33544-65

ACCESSION NR: AP5009176

Welds of EI417 steel samples exhibited the greatest corrosion attack. The high carbon content invited extreme corrosion. It is interesting to note that the stability of type EI417 steel to an oxidizing medium such as a 65% solution of $HNO_3$ increased considerably after cold working. The unaffected portions of the steel deformed during stamping were distinctly evident.

Microstudy of the samples after corrosion tests revealed that welds of M, R, and Sh steels do not tend to crack or intercrystalline corrosion. Weld joints of EI417 steel typically exhibit intercrystalline corrosion. 14

investigations are shown in Table 3.

Orig. art. has: 3 figures, 3 tables.

L 33544-65

ACCESSION NR: AP5009176

ENCLOSURE: 01

Table 1

| Symbol of Heats | Content % | | | | | | |
|---|---|---|---|---|---|---|---|
| | C | Mn | Si | P | S | Cr | Ni |
| M | 0.018 | 0.60 | 0.60 | 0.020 | 0.007 | 25.14 | 21.00 |
| R | 0.030 | 1.60 | 0.41 | 0.005 | 0.008 | 24.90 | 18.90 |
| Sh | 0.045 | 1.54 | 0.60 | 0.008 | 0.016 | 23.95 | 19.94 |
| P | 0.055 | 1.50 | 0.91 | 0.011 | 0.006 | 24.90 | 16.65 |

TABLE 3

| Designation of Samples | Time Before Appearance of Cracks |
|---|---|
| Sh | after 475 hours no cracks were found |
| P | after 475 hours no cracks were found |
| EI417 | 62 - 86 |

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L 33514-65

ACCESSION NR: AP5009176

ENCLOSURE: 02

Table 2

| Symbol of Steels | Heat treatment of weld | Corrosion rate (mm/year) in $HNO_3$ | |
|---|---|---|---|
| | | 65% sol. | 98% sol. |
| M | none | 0.77 | 0.83 |
| | 650°C, 2 hrs. | 1.40 | 1.21 |
| R | none | 0.53 | 0.47 |
| | 650°C, 2 hrs. | 1.11 | 1.18 |
| Sh | none | 0.61 | 0.55 |
| | 650°C, 2 hrs. | 1.32 | 1.47 |
| P | none | 0.35 | 1.19 |
| | 650°C, 2 hrs. | 5.81 | 15.65 |
| EI417 | none | 2.53 | 3.27 |
| | 650°C, 2 hrs. | 38.85 | 28.00 |

Card 5/6

L 33544-65

ACCESSION NR: AP5009176

O

ASSOCIATION: none

| | | |
|---|---|---|
| SUBMITTED: 00 | ENCL: 02 | SUB CODE: MM, IE |
| NO REF SOV: 000 | OTHER: 000 | JPRS |

Card 6/6

GABUYEV, G.Kh.; YEL'TSOV, K.S.; SHUL'TE, Yu.A.; MIKHAYLOV, P.A.; GAREVSKIKH, I.A.; LEYBENZON, S.A.; TSIVIRKO, E.I.; MEDOVAR, B.I.; LATASH, Yu.V.; FRANTSOV, V.P.; PAKHOMOV, A.I.; KAGANOVSKIY, G.P.; VOINOV, S.G.; SHALIMOV, A.G.; KALINNIKOV, Ye.G.; SMOLYAKOV, V.P.; KOSOY, L.F.

Improving the quality of electric-slag-refined bearing steel. Stal' 24 no.7:640-642 Jl '64. (MIRA 18:1)

1. Zavod "Dneprospetsstal'", Zaporozhskiy mashinostroitel'nyy institut, Institut elektrosvarki im. Ye.O.Patona i TSentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii imeni I.P.Bardina.

MEDOVAR, B.I., doktor tekhn. nauk

Congress of the International Institute of Welding in Prague.
Vest. AN SSSR 34 no.11:101 N '64. (MIRA 17:12)

L 32013-65 EWT(m)/EWA(d)/EWP(t)/EWP(k)/EWP(b) Pf-4 ASD-3 JD/SW/WB
ACCESSION NR: AP4049134 S/0020/64/159/001/0072/0073

AUTHOR: Paton, B. Ye. (Academician); Medovar, B. I.; Kirdo, I. V.; Pusrin, L. G.; Boyko, G. A.; Lutsyuk-Khudin, V. A.

30
27
B

TITLE: Spontaneous cleaning of oxide films from metal surfaces

18 18

SOURCE: AN SSSR. Doklady, v. 159, no. 1, 1964, 72-73

ABSTRACT: Oxide films were observed to disappear spontaneously from the surfaces of many steels and alloys to which the access of air had been cut off. Thus, oxide films on the air-oxidized inner surface of a hermetically sealed container made of carbon or Cr-Ni steel completely disappeared when the container was heated at 1000 to 1300C for several minutes. A similar self-cleaning tendency was observed on carbon- or Cr-Ni-steel foil placed in such a container. The air pressure inside the container at first rises during the heating process and then drops abruptly to approximately 1 mm Hg,

where it remains almost unchanged. It is difficult, as yet, to give an exact theoretical explanation for the phenomenon observed. It can only be assumed that at a high temperature the presence of atmospheric nitrogen and oxygen in a solid metal is thermodynamically more stable when these gases are dissolved in the metal than when they are in the form of oxides and nitrides on the metal's surface. The authors recom

ASSOCIATION: Institut elektrosvarki im. Ye. O. Patona AN UkrSSR (Electric Welding Institute, AN UkrSSR)

SUBMITTED: 23Jul64 ENCL: 00 SUB CODE: MM, TD

NO REF SOV: 001 OTHER: 000 ATD PRESS: 3145

Card 2/2

LUTSYUK-KHUDIN, V.A.; MEDOVAR, B.I., doktor tekhn. nauk, otv. red.

[New method of producing two-layer rolled plate for high-pressure vessels] Novyi sposob proizvodstva tolstolistovogo dvukhsloinogo prokata dlia sosudov vysokogo davleniia. Kiev, Naukova dumka, 1965. 59 p. (MIRA 18:5)

L 50194-65 EWT(m)/EWP(v)/T/EWP(t)/EWP(k)/EWP(b)/EWA(c) Pf-4 JD/HM

AM5016217 BOOK EXPLOITATION UR

24

B+1

Medovar, B. I. and Yu. V. Latash

Electroslag melting (Elektroshlakovyy pereplav). Kiev, Izd-vo Naukova dumka 1965. 78 p. illus., tables. 2300 copies printed. (At head of title: Akademiya nauk Ukrainskoy SSR. Ordena trudovogo krasnogo znameni institut elektrosvarki)

TOPIC TAGS: electroslag melting, electroslag welding, electroslag melted steel, electroslag melted alloy.

PURPOSE AND COVERAGE: This booklet is intended for engineering personnel, metallurgists, welders, machine-builders, metal specialists, and designers. It may also be useful to students of schools of education. The booklet describes the new method of electroslag melting of special high-quality steels and alloys. Data on the quality of electroslag-melted metals and their efficient utilization in various branches of modern engineering are presented.

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L 50194-65
AM5016217

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Prospects of Development of the Electroslag Melting Process — 76

SUB CODE: MM SUBMITTED: 13Feb65 NO REF SOV: 000

OTHER: 000

L 26538-65 EWP(c)/EWP(k)/EWT(m)/EWP(h)/EWP(b)/T/EWA(d)/EWP(1)/EWP(w)/EWP(v)/EWT(d)/
EWP(t) Pf-4/Pad IJP(c) EM/MJW/JD/HM/HW
ACCESSION NR: AP5003001 S/0125/65/000/001/0043/0049 53

AUTHOR: Medovar, B. I. (Doctor of technical sciences); German, S. I. (Candidate of technical sciences); Latyshev, Yu. V. (Engineer); Chekotilo, L. V. (Engineer); Levenberg, N. Ye. (Engineer) 42 B

TITLE: Mechanized arc welding of austenitic, heat-resistant EI725(KhN35VTP) alloy

SOURCE: Avtomaticheskaya svarka, no. 1, 1965, 43-49

TOPIC TAGS: heat resistant alloy, nickel base alloy, electroslag melted alloy, alloy welding, weld metal property, EI725 alloy

ABSTRACT: Several series of experiments with submerged arc welding of EI725 austenitic, heat-resistant alloy (0.35—0.7% C, 1% max Mn, 14—16% Cr, 36—38% Ni, 4—6% W, 1.31—1.73% Ti, 0.005% B) have been conducted. Conventionally metled

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L 26638-65
ACCESSION NR: AP5005001

6

Several other electrodes were tested. Satisfactory results were obtained with EP-235(Kh15N35G7V7M3T) alloy wire (0.05% C, 0.14% Si, 7.78% Mn, 14.79% Cr, 36.07% Ni, 7.62% W, 1.95% Ti, and 3.28% Mo). Arc welding with this wire under ANF-17 and ANF-22 fluxes yielded weld metal with a satisfactory heat-resistance and ductility. A new TsT-22 electrode with EP-235 alloy core has also been developed for manual welding of EI725 alloy. The developed technology was successfully used for welding the gas turbine housing at the Kharkov Turbogenerator Plant. Orig. art. has: 8 figures and 3 tables. [MS]

ASSOCIATION: Institut elektrosvarki im. Ye. O. Patona, AN UkrSSR (Electric Welding Institute, AN UkrSSR); KhTGZ im. S. M. Kirova; TsNIIChM im. Bardina

SUBMITTED: 12Aug64 ENCL: 00 SUB CODE: MM, IE

NO REF SOV: 013 OTHER: 001 AID PRESS: 3187

3

L 63975-65 EWT(m)/EWP(z)/EWP(b)/EWA(d)/EWP(t) MJW/JD

ACCESSION NR: AP5014242 UR/0383/65/000/002/0024/0026 48

669.187.6 47

AUTHOR: Zabaluyev, Yu. I. 44,55; Smolyakov, V. F. 44,55; Vul'fovich, M. S.; Kaganovskiy, G. P. 44,55; Stetsenko, N. A.; Yemel'yanenko, Yu. G.; Medovar, B. I. (Doctor of technical 44,55 sciences); Latash, Yu. V. (Candidate of technical sciences) 44,55

TITLE: Improving the macrostructure of electroslag steels

SOURCE: Metallurgicheskaya i gornorudnaya promyshlennost', no. 2, 1965, 24-26

TOPIC TAGS: electroslag melting, steel

ABSTRACT: Crystallization bands (layers)--regions which are more resistant to etching than the base metal--are observed in the macrostructure of ball bearing and structural steels melted by the electroslag method using ANF-6 flux. In the ingot, these layers reproduce the contour of the bottom of the metal bath, and in rolled products they appear as rings. These crystallization layers are caused by sharp changes in the rate at which the crystallization front advances due to disturbance of the thermal balance between the metal and slag baths. The authors studied the effect of substituting AN-291 flux for ANF-6. 12Kh2N4A, 18Kh2N4A, ShKh15, ShKh15SG

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L 63975-65

ACCESSION NR: AP5014242

and 30KhGSNA steels were melted. The working current was reduced by 15-20% and rate of flux consumption was increased by 15-25% over that of ANF-6. The macrostructure of forged and rolled specimens (circular and square, 100-150 mm) was dense and uniform without traces of layered crystallization. Contamination by nonmetallic inclusions is about the same with both fluxes. The elimination of the crystallization layers when AN-291 flux is used is due to the higher electrical resistance of this flux which makes hotter smelting possible, increasing the heat content (enthalpy) and consequently the thermal inertia of the melting zone. This effect acts as a "choke" which smooths out fluctuations in electrical conditions and results in a more uniform ingot. Orig. art. has: 2 figures, 3 tables.

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: MM

NO REF SOV: 002 OTHER: 000

Card 2/2

L 35031-65 EWT(m)/EWP(b)/EWP(t) JD 35

ACCESSION NR: AP5008155 S/0286/65/000/005/0034/0034 34

B

AUTHOR: Paton, B. Ye.; Dudko, D. A.; Medovar, B. I.; Latash, Yu. V.; Maksimovich, B. I.; Shevchenko, A. I.; Stupak, L. M.; Goncharenko, V. P.; Grigor'yev, L. F.; Petukhov, G. K.; Chudin, N. I.; Lubenets, I. A.; Yartsev, M. A.; Keys, N. V.; Tulin, N. A.; Kapel'nitskiy, V. G.; Privalov, N. T.; Pis'mennov, V. S.; Kholodov, Yu. A.; Bystrov, S. N.; Bastrakov, N. F.; Donets, I. D.; Silayev, A. Ya.

6

Class 18 No. 168743

TITLE: Method of electroslag casting of ingots. Class 18, No. 168743

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 5, 1965, 34

TOPIC TAGS: ingot casting, ingot electroslag casting, electroslag melting, steel melting, alloy melting, metal melting

ABSTRACT: This Author Certificate introduces a method of electroslag casting of ingots in an open or protective atmosphere or in vacuum, in which slag is first melted in a mold with a nonconsumable or consumable electrode arc or plasma jet. To improve the metal quality and the ingot surface and to raise the yield, the molten metal or, if needed, the slag is poured into the mold through a hollow consumable or nonconsumable electrode (see Fig. 1 of the Enclosure). Orig. art. has:

molten metal or, if needed, the slag is poured into the mold through a consumable or nonconsumable electrode (see Fig. 1 of the Enclosure). Orig. art. has: 1 figure. [ND]

Card 1/3

L 35031-65

ACCESSION NR: AP5008155

ASSOCIATION: Chelyabinskiy metallurgicheskiy zavod (Chelyabinsk Metallurgical Plant)

SUBMITTED: 06Feb63 ENCL: 01 SUB CODE: MM, IE

NO REF SOV: 000 OTHER: 000 ATD PRESS: 3215

Card 2/3

L 56003-65 EWT(m)/EPF(c)/EWA(d)/EWP(t)/EWP(z)/EWP(b) MJW/JD/WB

ACCESSION NR: AP5016022 UR/0125/65/000/006/0077/0077
672.3:620.191/.193.001.4 30 B

AUTHOR: Medovar, B. I. (Doctor of technical sciences); Langer, N. A. (Candidate of technical sciences); Yushkevich, Z. V. (Engineer); Kikut, V. A. (Engineer)

TITLE: Corrosion tests of welded joints of 00Kh25N20 steel in nitric acid
14 18

SOURCE: Avtomaticheskaya svarka, no. 6, 1965, 77

TOPIC TAGS: stainless steel, austenitic stainless steel, intercrystalline corrosion susceptibility, knife corrosion susceptibility, low carbon stainless steel/00Kh25N20 steel, 1Kh18N9T steel
14 14

ABSTRACT: Heat-treated (650C for 2 hr) and untreated TIG-welded joints of 00Kh25N20 steel containing 0.018, 0.030, 0.045, or 0.055% C were tested for corrosion in nitric acid. Some specimens were completely submerged in 54—56% nitric acid at 100—105C for 2445 hr. Other specimens were placed in the vapor of 64—65% nitric acid at 120—125C for 3154 hr. For comparison, welds of 1Kh18N9T [AISI 321] steel were tested under identical conditions. The submerged 25-20 type steel did not change its appearance and exhibited no susceptibility to intercrystalline or steel were tested under identical conditions. The submerged 25-20 type steel did not change its appearance and exhibited no susceptibility to intercrystalline or knife corrosion. The corrosion rate varied from 0.01 to 0.04 g/m$^2$·hr and was prac-

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L 56003-65
ACCESSION NR: AP5016022

tically twice as high for heat-treated specimens (0.02—0.10 g/m$^2$ hr). The welds of 1Kh18N9T steel were susceptible to knife corrosion. After testing in the gas phase, the steels containing less than 0.03% C preserved their appearance, but the surface of all other steel was corroded, particularly steel with 0.055% C and 1Kh18N9T steel. In tests in the vapor phase, the corrosion rate varied from 0.06 to 0.10 g/m$^2$ hr; 2.37 g/m$^2$ hr for steel containing 0.055% C and 1.12 g/m$^2$ hr for 1Kh18N9T steel. Thus, the test under industrial conditions showed that welds of low-carbon austenitic steels of the 00Kh25N20-type containing less than 0.03% C are impervious to intercrystalline and knife corrosion in reactive and 65% nitric acid. Orig. art. has: 1 table. [MS]

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: MM

NO REF SOV: 001 OTHER: 000 ATD PRESS: 4034

Card 2/2

L 2638-66 EWT(m)/EWA(d)/EWP(v)/T/EWP(t)/EWP(k)/EWP(z)/EWP(b)/EWA(c) MJW/JD/HM

ACC NR: AP5022351 SOURCE CODE: UR/0135/65/000/009/0030/0032

61
57
C

AUTHOR: Medovar, B. I. 44,55 (Doctor of technical sciences); Chekotilo, L. V. (Engineer); 44,55 German, S. I. (Candidate of technical sciences) 44,55

ORG: Electric Welding Institute im. Ye. O. Paton (Institut elektrosvarki); KhTZ im. S. M. Kirov 44,55 44,55

TITLE: Fluoride-boric acid flux for arc and electroslag welding of austenitic steels and alloys 44,55,16 16

SOURCE: Svarochnoye proizvodstvo, no. 9, 1965, 30-32

TOPIC TAGS: austenitic steel, austenitic alloy, heat resistant steel, heat resistant alloy, arc welding, submerged arc welding, electroslag welding, steel welding, alloy welding, welding flux/ANF22 flux

ABSTRACT: A fluoride-boric acid flux ANF-22 for submerged-arc and electroslag welding of heat-resistant austenitic steels and alloys and boron-containing austenitic steels has been developed. The ANF-22 flux (the $CaF_2$-$B_2O_3$ system), for which Author Certificate No. 164777 was issued, consists of fluorite concentrate and boron oxide. The flux has good technological and metallurgical properties in a wide range of welding conditions (a voltage range of 26—40 v and a welding speed of 16 to 50 m/hr) and ensures good weld forming and satisfactory slag removal. No boron oxidation was observed in the weld metal when ANF-22 flux was used in submerged-arc

Card 1/2 UDC: 621.791.048:669.15=194

L 2638-66

ACC NR: AP5022351

4

welding of boron-containing austenitic steels. In welding with boron-free Kh20N77T3Yu [Nimonic 80A] and Kh20N80T [Nimonic 75] filler wires under ANF-22 flux, the boron content in welds increased by 0.52 and 0.12%, respectively. Welds without hot cracks and with a notch toughness of 5—8 kgm/cm$^2$ and a high rupture strength also were obtained in austenitic, stainless, heat-resistant EI695P and EI725 steels. The flux also gave good results in electroslag welding of stainless, heat-resistant, nickel-chromium EI725, EI787, and other steels. Sound welds without cracks and other defects were obtained in welding, under an ANF-22 flux, a high-pressure gas-turbine housing, ribs, and other lap plates made of EI725 steel 14 mm thick. The high resistance to hot cracking is due to the formation in the weld metal of a two-phase structure consisting of austenite and a boride phase. Orig. art. has: 4 figures and 4 tables. [MS]

SUB CODE: MM, IE/ SUBM DATE: none/ ORIG REF: 004/ OTH REF: 000/
ATD PRESS: 4124

Card 2/2

L 2137-66 EWT(d)/EWT(m)/EWP(w)/EWA(d)/T/EWP(t)/EWP(z)/EWP(b)/EWP(l) MJW/JD

ACC NR: AP5023088 SOURCE CODE: UR/0125/65/000/009/0077/0078

AUTHOR: Privalov, N. T. 44,55 (Engineer); Tulin, N. A. 44,55 (Engineer); Medovar, B. I. 44,55 (Doctor of technical sciences); Maksimovich, B. I. 44,55 (Candidate of technical sciences)

50
B

ORG: none

TITLE: Quality 14 and production cost of DI-1 14 and EI961 14 steels melted in open-arc, vacuum-arc, or electroslag furnaces

SOURCE: Avtomaticheskaya svarka, no. 9, 1965, 77-78

TOPIC TAGS: steel, heat resistant steel 18, steel melting, arc melting, vacuum arc melting, electroslag melting/20Kh15N3MA steel, 13Kh12N2VMFA steel
44,55 14 14

ABSTRACT: The quality and production cost of DI-1 (20Kh15N3MA) 4 and EI961 (13Kh12N2VMFA) 18 heat-resistant steels melted in open-arc, vacuum-arc, or electroslag furnaces have been compared. It was found that vacuum-arc and electroslag-melted ingots have a dense, uniform structure without the segregations and other defects observed in metal produced in open-arc furnaces. Electroslag melting reduces sulfur content. Not much difference was found in the chemical composition and mechanical properties of steels melted by different methods. The production cost of electroslag-melted and vacuum-arc steels was 38—45% and 248—275% higher, respectively, than that of conventionally melted steels. The quality of electroslag-melted steels is

Card 1/2 UDC: 621.791.9

L 2137-66

ACC NR: AP5023088

0

not inferior and in some respects is even superior to that of vacuum-arc melted steel. Thus, it is more economical to use electroslag melting for DI-1 and EI961 steels. Orig. art. has: 2 tables. [ND]

SUB CODE: MM/ SUBM DATE: none/ ORIG REF: 000/ OTH REF: 000/ ATD PRESS: 4123

Card 2/2 dy

L 52117-65 EPA(s)-2/EWP(k)/EWA(c)/EWT(m)/EWP(b)/T/EWP(v)/EWP(t) Pf-4 JD/HM

ACCESSION NR: AP5015365 UR/0286/65/000/009/0114/0114
621.791.042.2

26

AUTHOR: Medovar, B. I.; Safonnikov, A. N.; Nechayev, V. A.; Yunger, S. V.; Denisov, A. V.

24
B

TITLE: Welding rod. Class 49, No. 170828

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 9, 1965, 114

TOPIC TAGS: welding, welding rod 4

ABSTRACT: This Author's Certificate introduces a rod for closed arc welding. The rod contains carbon, manganese, silicon, chromium, nickel, titanium, aluminum, niobium, sulfur, phosphorous, and iron. The quality of the welded joint is improved by using the following percent proportions of components: carbon--no more than 0.09; silicon--no more than 0.8; manganese--1-2; chromium--17-19; nickel--9-10.5; titanium--1.0-1.4; aluminum--0.3-0.5; niobium--0.6-0.8; sulfur-no more than 0.018; phosphorous--no more than 0.03; remainder--iron.

ASSOCIATION: Volgogradskiy Nauchno-issledovatel'skiy institut tekhnologii machino-

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L 52117-65

ACCESSION NR: AP5015365

2

stroyeniya (Volgograd Scientific Research Institute of Machine Building Technology); Institut elektrosvarki im. Ye. O. Patona (Electric Welding Institute)

SUBMITTED: 08Mar63 ENCL: 00 SUB CODE: IE, MM

NO REF SOV: 000 OTHER: 000

Card 2/2

L 5019-66 EWT(m)/EWP(t)/EWP(k)/EWP(b)/EWA(c) JD/HW

ACC NR: AP5022041 SOURCE CODE: UR/0286/65/000/014/0113/0113

44,55 44,55 44,55 44,55

AUTHORS: Paton, B. Ye.; Dudko, D. A.; Medovar, B. I.; Khrundzhe, V. M.; 56
Lutsyuk-Khudin, V. A.; Sayenko, V. Ya.; Dryapik, Ye. P.; Shekhter, S. Ya.; 03
44,55 Salov, Ye. M.; Baranov, S. V. 44,55 44,55 44,55
44,55 44,55

ORG: none

TITLE: A method for obtaining two-layer rolling. Class 49, No. 173115 [Institute of Electric Welding im. Ye. O. Paton, AN UkrSSR (Institut elektrosvarki AN UkrSSR)]
44,55

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 14, 1965, 113

TOPIC TAGS: metal rolling, metal cladding, metal industry
44,55

ABSTRACT: This Author Certificate presents a method for obtaining two-layer rolling by lining a plate ingot with a solid plate. To produce proper adhesion between the layers, the plate ingot is lined with a plate of cladding metal to which is welded a plate of metal analogous in composition to the one being lined.

SUB CODE: IE, MM/ SUBM DATE: 04Jul63/ ORIG REF: 000/ OTH REF: 000

BC

Card 1/1 UDC: 621.771.8

07010723

L 13272-66 EWT(m)/EWA(d)/EWP(v)/T/EWP(t)/EWP(k)/EWP(z)/EWP(b)/EWA(h)/EWA(c)

ACC NR: AP6002908 JD/HM SOURCE CODE: UR/0286/65/000/024/0073/0073

INVENTOR: Medovar, B. I.; Borzdyka, A. M.; Latyshov, Yu. V.; Pinchuk, N. I.; Chekotilo, L. V.; Topilin, V. V.

ORG: none

TITLE: Weldable, heat-resistant steel. Class 40, No. 177079 14 18 44 B

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 24, 1965, 73

TOPIC TAGS: steel, heat resistant steel, chromium ~~containing~~ steel, nickel ~~containing~~ steel, tungsten ~~containing~~ steel, titanium ~~containing~~ steel, manganese ~~containing~~ steel

18,44,55

ABSTRACT: This Author Certificate introduces a weldable, heat-resistant steel with increased resistance to local failure of welded parts. The steel contains 0.08% max carbon, 0.5% max silicon, 0.5—1.0% manganese, 14.5—16.5% chromium, 23—25% nickel, 4.0—5.0% tungsten, 1.5—2.0% titanium, 0.4—0.7% boron, and 0.02% max sulfur. [AZ]

SUB CODE: 11/ SUBM DATE: 25Apr64/ ATD PRESS: 4185

Card 1/1

UDC: 669.14.018.44

MEDOVAR, B.I.; CHEKOTILO, L.V.; GERMAN, S.I.; LEVENBERG, N.Ye.; LATYSHEV, Yu.V.

Mechanized arc welding of EI725 (KhN35VTR) austenitic heat resistant alloy. Avtom.svar. 18 no.1:43-49 Ja '65.

(MIRA 18:3)

1. Institut elektrosvarki im. Ye.O.Patona AN UkrSSR (for Medovar, Chekotilo). 2. Khar'kovskiy turbinnyy zavod im. S.M.Kirova (for German, Levenberg). 3. TSentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii imeni I.P.Bardina (for Latyshev).

MEDOVAR, B.I.

New stainless steel made in France. Avtom. svar. 18 no.4:
74-76 Ap '65. (MIRA 18:

L 10251-66 EWT(m)/EWP(w)/EWP(v)/T/EWP(t)/EWP(k)/EWP(z)/EWP(b)/EWA(c) IJP(c)
ACC NR: AP5027467 JD/HM/HN SOURCE CODE: UR/0032/65/031/011/1388/1389

AUTHOR: Medovar, B. I.; Chekotilo, A. V.
44,55 44,55

61

ORG: Electric Welding Institute im. Ye. O. Paton, AN UkrSSR (Institut elektrosvarki AN UkrSSR)
44,55

TITLE: A method of determining the susceptibility to brittle failure of complexly alloyed dispersion-hardenable austenitic alloys
44,55,14 44,55,14

SOURCE: Zavodskaya laboratoriya, v. 31, no. 11, 1965, 1388-1389

TOPIC TAGS: , nickel alloy, heat resistant alloy, chromium alloy, brittleness, mechanical failure, metal crystallization

ABSTRACT: A method of express evaluation of the brittle failure susceptibility of austenitic, age-hardenable, complex, nickel-chromium alloys is described. Cylindrical (40 mm in diameter) or flat (40 mm thick) test specimens with sharp stress concentrators (single-bevel grooves 5 mm deep, 15 deg angle, machined at a distance of 25 mm from one another) are welded using filler wire of the same composition as the alloy being welded (see Fig. 1). Formation of crystallization cracks is promoted by the use of a high-silicon flux. If the metal is susceptible to brittle failure, cracks in the base metal and grooves become visible either immediately after welding or after aging at 700—850C for 50 hr. The method makes it possible to classify 14

Card 1/3 UDC: 620.178.2

L 10251-66

ACC NR: AP5027467

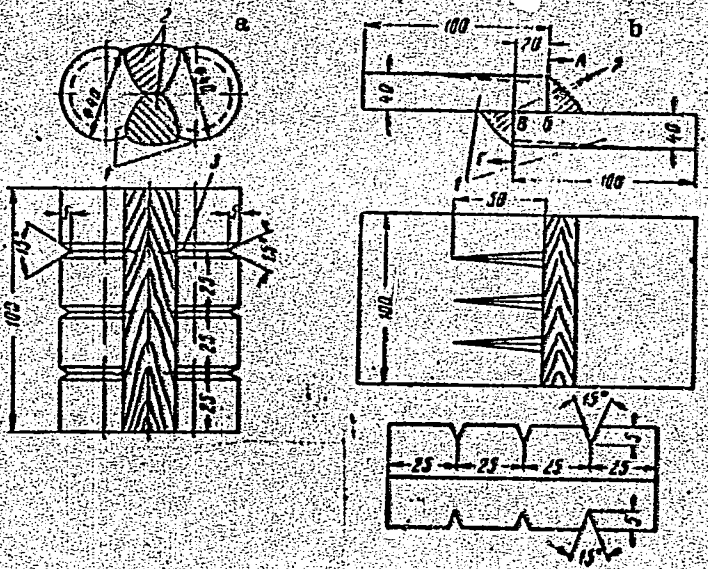

Fig. 1. Round (a) and flat (b) specimens for testing alloy for susceptibility to brittle failure

1 - Billet; 2 - welded seam; 3 - grooves (stress concentrators).

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L 10251-66

ACC NR: AP5027467

0

alloys, to determine their susceptibility to brittle failure depending on the alloy purity, heat treatment, grain size, etc., and, hence, to develop suitable methods for prevention of the brittle failure. Orig. art. has: 2 figures. [MS]

SUB CODE: 11/ SUBM DATE: none/ ATD PRESS: 4161

Card 3/3

MEDOVAR, B.I., doktor tekhn. nauk

Congress of the French Metallurgical Society held in Paris. Vest.
AN SSSR 35 no.2:88 F '65. (MIRA 18:3)

L 21257-66 EWT(m)/EPF(n)-2/EWP(v)/T/EWP(t)/EWP(k) IJP(c) JD/HM/HW/JG

ACC NR: AP6008072 SOURCE CODE: CZ/0065/66/000/001/0055/0063

44

AUTHOR: Medovar, B. I.; Pavlivchuk, G. A.—Pavlijcuk, G. A.; Chekotilo, L. V.—Cekotilo, L. V.

B

ORG: Institute for Electric Welding im. Ye. O. Paton; Kiev (Institut elektrosvarki)

TITLE: The alloying of high temperature resistant Nimonic type Ni-alloys by boron

44,55 16 14 27 55

SOURCE: Kovove materialy, no. 1, 1966, 55-63

TOPIC TAGS: nickel base alloy, cobalt base alloy, boron containing alloy, weldability, plasticity

ABSTRACT: The article deals with the investigation of the effect of high boron content on the properties of nickel- and cobalt-based alloys conducted at the Institute of Electric Welding im. Ye. O. Paton. The investigation embraced alloys with 0.005, 0.45, and 0.70 per cent of boron and without it. The alloys were thermally treated and subjected subsequently to mechanical, strength and weldability tests. The results of the tests are given in tabulated form. They show that the alloying of the austenitic Cr-Ni alloys and welded joints of the type Nimonic by boron (0.3 to 0.7 per cent) seems to heighten their strength and high temperature stability, and at the same time maintaining acceptable plasticity and notch toughness. The austenitic boronic structure consists of two phases which makes these alloys unprone to hot cracking in the weld metal and in the welded zone while fusion welded. Owing to

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L 21257-66

ACC NR: AP6008072

good weldability and high strength the nickel-base alloys with different alloying elements and boron content over 0.3 per cent are very perspective for large-scale application in technical practice. Orig. art. has: 4 figures, and 4 tables. [JKP]

SUB CODE: 11/ SUBM DATE: 26Jun65/ OTH REF: 002/ SOV REF: 003/

Card 2/2

L 14543-66 EWT(m)/EPF(n)-2/EWP(v)/T/EWP(t)/EWP(k)/EWP(b) JD/WW/HM/HW/JG

ACC NR: AP6006309 SOURCE CODE: UR/0413/66/000/002/0013/0013

INVENTOR: Paton, B. Ye.; Medovar, B. I.; Puzrin, L. G.; Boyko, G. A.; Lutsyuk-Khudin, V. A.; Bondarchuk, O. P.; Timofeyev, D. I.; Dryapik, Ye. P.

45

ORG: none

TITLE: Method of producing metal laminates. Class 7, No. 177824 [announced by the Electric Welding Institute im. Ye. O. Paton (Institut elektrosvarki)]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 2, 1966, 13

TOPIC TAGS: metal, clad metal, metal laminate, metal rolling

ABSTRACT: This Author Certificate introduces a method of producing metal laminates by pack rolling with a low-melting vanishing insert placed between the metals to be bonded. To obtain a strong bond between dissimilar metals, the rolling is done with the insert in the liquid state. [ND]

SUB CODE: 11/ SUBM DATE: 29May64/ ATD PRESS: 4197

Cladding 18

Card 1/1

L 35339-66 EWT(m)/EWP(w)/T/EWP(t)/ETI/EWP(k) IJP(c) JD

ACC NR: AP6011826 (N) SOURCE CODE: UR/0383/66/000/002/0035/0039

40

AUTHOR: Faybisovich, L. I.; Varakin, N. I.; Larichkin, M. S.; Medovar, B. I.; Latash, Yu. V.; Yemel'yanenko, Yu. G.; Maksimov, I. P.; Koval', S. I.; Akulinin, M. A.

B

ORG: none

16

TITLE: Quality of heavy forgings of 36KhN1MFAR electroslag rotor steel 15

SOURCE: Metallurgicheskaya i gornorudnaya promyshlennost', no. 2, 1966, 35-39

TOPIC TAGS: steel forging, steel, nonmetallic inclusion, brittleness, temper brittleness

11

ABSTRACT: The study deals with the effect of electroslag melting on the quality of vacuum-degassed and nondegassed open-hearth steel. Forgings of 36KhN1MFAR steel, obtained from electroslag ingots weighing 13 tons, have a compact structure and a homogeneous chemical composition. The content of sulfur, gas, and nonmetallic inclusions in them is considerably lower than in similar forgings from metal made the conventional way. The mechanical properties of the remelt metal are characterized by high stable values in the length and cross section of the forging both in longitudinal and diametrical directions. Electroslag melted 36KhN1MFAR steel does not possess a tendency to temper brittleness. Its nul ductility transition temperature is below -70C. Orig. art. has: 5 figures and 4 tables. 16 [NT]

SUB CODE: 11/ SUBM DATE: none/ ORIG REF: 003

Card 1/1 UDC: 669-13:658.562

L 23453-66 EWT(d)/EWT(m)/EWP(w)/EWP(v)/T/EWP(t)/EWP(k) IJP(c) JD/HM/EM

ACC NR: AP6006334 SOURCE CODE: UR/0413/66/000/002/0057/0057

41

AUTHOR: Paton, B. Ye.; Dudko, D. A.; Medovar, B. I.; Lutsyuk-Khudin, V. A.; Sayenko, V. Ya.; Kumysh, I. I.; Andrianov, G. G.; Karpov, V. F.; Dovzhenko, N. F.; Antonets, D. P.; Kuzema, I. D. 3

ORG: none

TITLE: Method of producing composite rolled stock. Class 21, No. 177985 [announced by Electric Welding Institute im. Ye. O. Paton (Institut Elektrosvarki)]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 2, 1966, 57

TOPIC TAGS: welding, metal rolling, sandwich rolling

ABSTRACT: An Author Certificate has been issued for a method of producing composite rolled metal by using a billet consisting of ingots or plates welded together by electroslag welding. To save on stainless steel, lower the thickness of the clad layer, and simplify the welding procedure, it is suggested that the process be begun with a heterogeneous plate made from prewelded and prerolled smaller billets having been a carbon steel and clad layer, and then adding additional ingots or plates to produce sandwich rolled stock. [LD]

6

SUB CODE: 13/ SUBM DATE: 11Apr63 ORIG: none/ OTH REF: none/

Z

Card 1/1 UDC: 621.791.793:621.771.2-419.5

L 35823-66 EWP(k)/EWT(m)/T/EWP(v)/EWP(t)/ETI IJP(c) JD/HM

ACC NR: AP6021799 (N) SOURCE CODE: UR/0413/66/000/012/0063/0063

**INVENTOR:** Medovar, B. I.; Stroyev, V. S.; Chektilo, L. V.; Tarkhov, N. A.; Pinchuk, N. I.

40
B

**ORG:** none

14

**TITLE:** Electrode for welding oxidation-resistant steels. Class 21, No. 182814 [announced by the Electric Welding Institute im. Ye. O. Paton (Institut elektrosvarki)]

**SOURCE:** Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 12, 1966, 63

**TOPIC TAGS:** steel, [redacted] welding, ~~oxidation~~, Corrosion resistant steel, welding electrode

**ABSTRACT:** This Author Certificate introduces an electrode for welding oxidation-resistant steels. The electrode coating contains 31% marble, 27% fluorspar, 6.5% manganese, 1.5% aluminum, and 14% ferrosilicon. To increase the weld resistance against carburization, hot cracking, and oxidation, 12% ferroboron and 8% dolomite are added to the coating composition. [ND]

SUB CODE: 11,13/SUBM DATE: 26May65/ATD PRESS: 5136

Card 1/1

L 35825-66 EWP(k)/EWT(m)/T/EWP(v)/EWP(t)/ETI IJP(c) JD/HM

ACC NR: AP6021827 SOURCE CODE: UR/0413/66/000/012/0136/0136

INVENTOR: Medovar, B. I.; Chekotilo, L. V.; Pinchuk, N. I. 43 B

ORG: none

TITLE: Welding wire. Class 49, No. 183042

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 12, 1966, 136

TOPIC TAGS: welding, steel, austenitic steel, corrosion ~~[illegible]~~ resistant steel, ~~[illegible]~~, welding rod, welding wire, weld

ABSTRACT: This Author Certificate introduces a filler or electrode wire for welding oxidation-resistant, austenitic, silicon-rich steels. The wire contains up to 0.1% carbon, 2.5—3.0% silicon, up to 1.5% manganese, 24—27% chromium, 18—21% nickel, 0.02% max sulfur, 0.03% max phosphorus and 0.45—0.65% boron. Boron increases the weld resistance against carburization, hot cracking, and sigma-phase formation. [ND]

SUB CODE: 13, 11/ SUBM DATE: 06Aug64/ ATD PRESS: 5036

Card 1/1 UDC: 621.791.042